

Claims

1. A neurosurgical catheter having a fine tube arranged for insertion into the brain parenchyma of a patient with an external diameter of not more than 1.0mm.

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2. A neurosurgical catheter according to claim 1, having an external diameter of not more than 0.7mm.

10 3. A neurosurgical catheter according to claim 1, having an external diameter of not

more than 0.65mm.

4. A neurosurgical catheter according to claim 1, having an external diameter of not more than 0.5mm.

15 5. A neurosurgical catheter according to any one claims 1 to 4, wherein the fine tube of the catheter is generally circular in cross-section.

20 6. A neurosurgical catheter according to any one claims 1 to 5, further comprising a connector tube connected to one end of the fine tube, the connector tube being of greater diameter than the fine tube.

7. A neurosurgical catheter according to claim 6, further comprising a hub disposed between the fine tube and the connector tube.

25 8. A neurosurgical catheter according to claim 7, wherein the hub includes a passageway connecting the fine tube and the connector tube.

9. A neurosurgical catheter according to claims 8, wherein the passageway includes a first passage in which the fine tube is securely inserted.

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10. A neurosurgical catheter according to claims 8 or 9, wherein the passageway includes a second passage in which the connector tube is securely inserted.

11. A neurosurgical catheter according to claim 10, wherein the hub further includes a link passage disposed between the first and second passages.

5 12. A neurosurgical catheter according to any one of claims 7 to 11, wherein the hub includes a cylindrical body.

13. A neurosurgical catheter according to any one of claims 7 to 12, wherein the hub includes one or more flanges by which it is secured to the skull of the patient.

10 14. A neurosurgical catheter according to claim 13, wherein the or each flange includes an internal surface defining a countersunk hole by which the hub can be secured to the skull of a patient by screws.

15 15. A neurosurgical catheter according to any one of claims 7 to 14, wherein the hub includes a stop surface adjacent to where the fine tube is secured to the hub.

16. A neurosurgical catheter according to claim 15, wherein the hub is tapered towards the stop.

20 17. Neurosurgical apparatus comprising:
a guide tube for insertion into the brain of a patient towards a desired target, the tube having distal and proximate ends and a head disposed at the proximate end of the tube for attachment to the skull of the patient; and
25 a catheter arranged for insertion into the brain parenchyma of the patient via the tube, the catheter being arranged according to any one of claims 1 to 16.

30 18. A neurosurgical catheter according to claim 17, wherein the head of the guide tube includes an externally threaded surface for engagement with the skull of the patient.

19. A neurosurgical catheter according to claim 17 or 18, wherein the head including a slotted dome structure, and wherein the catheter is arranged according to claim 15 or 16 such that the stop of the catheter abuts the dome structure as the fine tube passes through the slot.

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20. A neurosurgical catheter according to claim 19, wherein the slot is shaped such that, as the catheter is bent over in the slot, it resists kinking.

10 21. A neurosurgical catheter according to claims 19 or 20, wherein the domed structure is shaped such that, as the catheter is bent over in the slot with the stop abutting the domed surface, the distal end of the catheter will remain accurately located at its target.

15 22. A neurosurgical guide device comprising;
a tube for insertion into the brain of a patient towards a desired target, the tube having a distal end and a proximal end;
a head disposed at the proximal end of the tube for attachment to the skull of the patient,
characterised in that the internal diameter of the tube is not more than 1mm; and
20 that the tube is of a length such that the distal end falls short of the target by between 5 and 20mm.

25 23. A method of positioning a catheter at a target in the brain parenchyma of a patient, comprising:
insertion of a neurosurgical guide into the brain towards the target, the guide including a tube having distal and proximal ends, and a head disposed at the proximal end thereof, the distal end falling short of the target by between 5 and 20mm;
securing the head to the skull; and
30 insertion of a catheter of no more than 1mm diameter through the tube and into the target.

24. A kit comprising:

one or more neurosurgical catheters according to any one of claims 1 to 16;

one or more guide tubes for insertion into the brain of a patient towards a desired target, each tube having distal and proximate ends and a head disposed at the proximate end of the tube for attachment to the skull of the patient; and

5 one or more guide wires.

25. The kit according to claim 24, which is provided in a pack having separately marked sections, wherein each section contains one catheter, one guide tube and one guide wire.